

Virtual Fixturing

Claim :

1: Using multiple probes , { each individual probe is attached to a vertical threaded rod (which rotates 360 degrees at the base , and the base is attached to a horizontal threaded rod ,both rods are set on top of a pivot (which rotates assembly 360 degrees) , the pivot is attached to another threaded rod in a base plate ; by using described process (steps A – D) } enables one fixture to locate every possible component /part for Inspection without changing fixtures or fixture components , {within maximum travel of base plate size} .

Process :

A : By turning knob at the top of vertical threaded rod enables infinite location of probe within maximum travel of “ Z “ axis .

B : By turning knob at end of horizontal threaded rod enables infinite location of probe within maximum travel of “ X “ or “ Y “ axis

C : By turning knob at the end of threaded rod in base plate enables infinite location of probe within maximum travel of “ Y “ or “ X “ axis .

D : By rotating pivot enables infinite location of probe in Angular location or “ C “ axis .

Claim 2 : Having all threaded rods geared to electric servo motors and controlled by computer numerical control .Enables the same infinite location of each probe , within maximum travel , with faster accurate placement of probes .



Virtual Fixturing

Reference Numeral Listing

Figure #1 :

- 1 = Base Plate
- 2 = Coupler (threaded center / attaches to Pivot under Riser Base)
- 3 = Bored Hole , for Assembly to fit in
- 4 = Bearing (2X at both ends of threaded rod)
- 5 = Slot for Pivot
- 6 = Slot for connecting Coupler to Pivot
- 7 = Threaded Rod
- 8 = Knob

Figure #2 :

- 1 = Riser Base
- 2 = Knob
- 3 = Threaded Rod
- 4 = Pivot
- 5 = C ' Bore (for connecting Pivot to Base Plate Coupler / and
connecting Riser Base to Pivot)
- 6 = Coupler (Base Plate)
- 7 = Threaded Rod (Base Plate)
- 8 = Bolts (locking Riser Base)
- 9 = Pivoting Pin

Virtual Fixturing

Reference Numeral Listing (cont.)

Figure #2 : 10 = C ' Bore (for Riser pivoting / and location)

11 = Threaded Holes to lock Riser rotation

12 = Bearings (at both ends of threaded rod)

13 = Coupler (Riser Base)

Figure #3 : 1 = Riser body

2 = Threaded Rod

3 = Coupler (Riser to Probe)

4 = Bearings (at both ends of Threaded Rod)

5 = Slots (rotated around base of Riser connecting to Riser Base)

6 = Probe

7 = Knob